SOME BEETLES IN PLINY'S *NATURAL HISTORY*

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Abstract

Pliny the Elder (A.D. 23-79) is famous for his wide-ranging *Natural History*. Included among the fauna are 14 species of Coleoptera. Especially interesting are 3 species in the subfamily Lyttinae.

Introduction

One of the most interesting ancient Roman authors, whose works have survived to be savored by modern readers, is Pliny the Elder (A.D. 23-79). Not only was he prominent as a political and military leader, but he was also one of the outstanding polymaths of his time. His enthusiasm and curiosity seems to have been unlimited, and he met his death in 79 from suffocation when he got too close to the erupting Vesuvius, while commanding a fleet of ships dispatched to help refugees fleeing from Pompeii and Herculaneum. Although many of his writings on history, as well as those on the Roman military campaigns in Germany, have not survived, Pliny's monstrous collection of varia—the *Natural History*—has come down to us almost intact. Within the 37 books is an incredible hodgepodge of facts, theories, myths, tales-told-for-amusement, and gleanings from earlier Greek works. The *Natural History* became a storehouse of semi-believable and believable tales for medieval storytellers, and Pliny's anecdotes of the headless tribesmen of India, seadragons of the farthest oceans, and misty lands far beyond Ultima Thule, were stock items in common knowledge when Columbus sailed west in 1492.

Pliny's booklearning is beyond dispute. He tells us that his work contains 20,000 "facts" borrowed from 2,000 learned works, and the scope of his curiosity covers literally everything. First comes astrology and astronomy, then a detailed description of the earth's surface (which may be purloined from Pomponius Mela, or Marcus Agrippa, earlier authors of geographies). Next comes a description of man, a collection of historical anecdotes ranging from the philosophical speculations of Pompey the Great (104-48 B.C.) to the fact that only one woman in history (the Spartan lady, Lampido) was daughter, wife, and mother of a king. Further sections of the *Natural History* have the label "zoological." Man is employed as the occasional contrast with all other animals, and Pliny lards everything with as many tales as he can squeeze into his breathless account.

Pliny's Coleoptera

Among the hundreds of different animals Pliny describes, there are 14 species of Coleoptera that can be keyed with fair assurance. It is of great interest to historians of entomology to contrast Roman (and Greek) taxonomic methods with those of modern times. Nomenclature of insects was always based either on characteristics of observed habits, or on the effects on man, either beneficial or destructive. There is little evidence that Greeks and Romans did more than Aristotle had suggested: classify by "type," which was meant in the broadest sense of comparative anatomy. Animals that were warm-blooded and gave birth to their young alive could be distinguished from other "types," but the comparison was always to man. This ladder-notion remains with us today, when we speak of the primates as the "highest" order.

The 14 species in the *Natural History* are: *Drilus flavescens* Fabr. (*Natural History,* XI, 98, and XVIII, 250), *Scarites laevigatus* F. (XXX, 39), *Meloe variegatus* L. (XXII, 30, and XXX, 30), *Ergates faber* L. (XI, 113; XIII, 134; XVII, 220; and XXX, 115), *Polyphylla fullo* L. (XXX, 100), *Sitophilus granarius* L. (XVIII, 302), *Ateuchus sacer* L. (XI, 70 and 97; XX, 98; and XXX, 99), *Lucanus serraticornis* Fairm. (XI, 97), *Lampyris splendidula* L. (XI, 98), *Anobium pertinax* L. (XI, 98), *Cetonia speciosissima* Scop. (XXIX, 32), and 3 cantharid species of the subfamily Lyttinae. Pliny relates most of his information about many of his insects and beetles (*e.g.* fireflies, stagbeetles, dung beetles and the "sacred scarab" of Egypt) through folktales and by citing other authorities. His accounts illuminate the way Romans (and their Greek predecessors) studied insects, and also explain why they studied them at all. Of course, some insects such as bees (which form the main subject of Vergil's *Georgics,* Book III) had venerated economic utility, but most insects received attention only if they were associated either with folkmedicine or traditions based on hoary and accepted superstitions. Pliny's blister beetles illustrate both.

Lyttinae in the *Natural History*

The 3 species of blister beetles in the *Natural History* probably are: *Lytta dives* Brullé (*Natural History,* XXIX, 76, 93, and 94), *Lytta segetum* Fabr. (XXVIII, 78), and *Lytta nuticollis* Muls. (XXIX, 94). These 3 kinds of beetles were known to have the substance called *cantharis,* which was also the name commonly given to the beetles. In modern pharmacy, the substance is cantharidin, and it remains useful in veterinary medicine (except for dogs and cats) as a vesicant and counterirritant in diseases of bones, joints, ligaments, tendons, and bursae. In classical antiquity, *cantharis* had many reputable uses, including being the main ingredient in "love potions," the dim ancestors of the notorious "Spanish Fly." Pliny recognizes *cantharis* as medically harmful and beneficial, and tells (XXIX, 93-94) how it is a much argued question in his day just where the substance was in the insect: "some believe the feet and the head, but everyone agrees that the wings are important." *Pinnae* here may mean elytra, but most likely Pliny does not distinguish between the elytra and the wings, understandable when one sees the outstretched elytra of a blister beetle in flight.

Pliny writes that *cantharis* in a drink was poisonous and caused very sharp pains in the bladder. A certain Cossinus (Pliny adds by way of illustration), friend of the Emperor Nero (A.D. 54-68), had died when an Egyptian doctor gave Cossinus a drink of *cantharis* for treatment of *lichen* (probably ringworm). He goes on to say that *cantharis* mixed with grape juice, and sheep or goat suet is very helpful against skin diseases, applied externally. But Pliny confuses the *cantharis* with the gall made by a gall wasp (the British "Robin's Pin Cushion"), which suggests a confused recipe tradition for the salve.

There are crabbed instructions for the preparation of the salve. One puts the beetles into an earthen pot, not lined with pitch (as the normal wine jug would be), closes the mouth with a piece of cloth, and hangs it (presumably upside down) over boiling vinegar and salt. The steam suffocates the beetles, and then they are put away in storage. The prepared *cantharides* were very valuable, and Pliny tells the story of Cato the Younger (95-46 B.C.) being brought to trial for auctioning off a king's royal store of the drug for 60,000 sesterces. *Cantharis* was also thought to be most beneficial after the touch of a salamander, believed to be very poisonous (XXIX, 76).

Cantharis beetles were sometimes so numerous that swarms of them devastated crops, especially in Asia Minor. Pliny notes that there is only one real measure that is effective against such invasions: have a menstruating woman walk through the fields, and ". . . caterpillars, worms, beetles, and other vermin will fall to the ground" (XVIII, 77-78). This discovery was made in Cappadocia (Pliny's authority here is Metrodorus of Scepsis [*fl. c.* 140 B.C.]), when a plague of cantharid beetles was banished by a menstruating woman walking through the fields. To Pliny, this illustrates the "incredible power of women," especially when they menstruate, a folk tradition linked with magic and witchcraft in many early cultures.

Pliny's blister beetles may also include the very common *Cantharis vesicatoria* L., and the same conclusions could be drawn from his account of this species as from his accounts of the others. It seems certain that the reputation of *C. vesicatoria* was well established in classical antiquity, since Pliny is not the only author to give attention to *cantharis* in the magical and medical traditions. Galen of Pergamon (*c.* A.D. 129-199), the famous physician, believes the beetle worthy of extensive comment particularly in the preparation of antidotes against its well known effects (esp. in *Faculties and Blendings of Simple Drugs,* Bks. VII-XI, and *Compounding Drugs According to Parts of the Body,* Bks. I-VI [ed. C. G. Kühn, Vol. XII]). Celsus (*fl.* in the reign of Tiberius [A.D. 14-37]), and Dioscorides (*fl. c.* A.D. 50-70) are among the many other Greek and Roman authors on medicine and drugs that consider blister beetles important in the medical practice of the time.

The modern cantharidin is prepared from dried specimens of *C. vesicatoria,* and the elytra alone are used in modern pharmacy, since they contain more of the active principle (cantharidin: hexahydro-3a,7a-dimethyl-4,7-epoxyisobenzofuran-1,3-dione; the preparation, derived from the elytra usually contains 0.6-1% cantharidin, 10-15% fat, resinous matter, and acetic and uric acids) than all of the other body parts combined. Imms (1970) reports that Beauregard (1890) found the third pair of accessory glands in the male *C. vesicatoria* was extremely rich in cantharidin, but commercial preparation of the drug depends almost exclusively upon the elytra. Pliny (*Natural History,* XXIX, 93-94) was quite correct in his learned guess concerning the source of *cantharis.*

SOURCES AND SUGGESTIONS FOR FURTHER READING

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